BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON D. C. 20554

In the Matter of	)	DOCKET FILE COPY ORIGINAL
	)	
	)	
Amendment of Part 90 of the	)	
Commission's Rules to Adopt	)	PR Docket No. 93-61
Regulations for Automatic	)	
Vehicle Monitoring Systems	)	

To: The Commission

REPLIES TO OPPOSITIONS AND COMMENTS

TELECOMMUNICATIONS INDUSTRY ASSOCIATION
USER PREMISES EQUIPMENT DIVISION
WIRELESS CONSUMER COMMUNICATIONS SECTION

Jay E. Padgett
Chairman,
Wireless Consumer Communications Section
User Premises Equipment Division

Daniel L. Bart
Vice President
Standards and Technology
Telecommunications Industry Association
2500 Wilson Boulevard
Suite 300
Arlington, VA

(703) 907-7703

Dated: June 7, 1995

I. INTRODUCTION

1. The Wireless Consumer Communications Section ("the Section") of the Telecommunications Industry Association ("TIA") User Premises Equipment Division ("UPED") hereby replies to the Oppositions and Comments (collectively the "Oppositions") submitted by a number of parties in response to the Petitions requesting reconsideration, partial reconsideration and/or clarification (collectively the "Petitions") of the Report and Order ("Order") adopted by the Commission in the above-captioned proceeding.[1]

2. As noted in its Comments on the Petitions, the Section believes that the Commission's decision struck a reasonable balance among the diverse needs represented in this proceeding. In most cases, the Oppositions submitted by parties which filed Petitions echo the views already put forth in their Petitions, and advance no compelling arguments for any major changes in the Commission's decision.[2] However, as also discussed in the Section's Comments, there are several areas raised in some of the Petitions in which clarification is needed to ensure that the use of the band by Location and Monitoring Service ("LMS") providers matches the Commission's intent.

II. THE COMMISSION HAS ESTABLISHED RULES FOR SPECTRUM-SHARING WHICH PROPERLY BALANCE THE INTERESTS OF BAND USERS

3. The 902-928 MHz band is unique in the diversity of existing and envisioned applications that share, or intend to share, the radio spectrum. In adopting the band plan in the Order as well as the provisions of §90.361 and §90.353(a)(4), the Commission is attempting to maintain an environment in which many of these diverse applications can flourish. Obviously, it is impossible to create a set of rules that support every conceivable application, since some such applications would either generate intolerable levels of interference to other users, or would themselves be highly intolerant of interference from other users. There are some applications which simply do not lend themselves to the sort of general sharing that characterizes the 902-928 MHz band.

---

1. FCC 95-41, Adopted February 3, 1995, released February 6, 1995.
2. The Section considers "major" changes to be: (1) modification of the band plan; (2) a weakening of the provisions balancing Part 15 and LMS interests with regard to interference; (3) relaxation of the LMS emission masks in ways that could cause increased interference to Part 15; (4) increases in allowed LMS transmit power levels; (5) liberalization of the grandfathering provisions; and (6) relaxation of the restrictions on permissible uses.

4. Several of the Oppositions alluded to this fact; for example, the Part 15 Coalition noted that the Commission has "developed sharing rules that require concessions from all users of the band."[3] Those sharing rules include the band plan, the limitations on permissible uses for LMS, the power limits for LMS, and the provisions protecting Part 15. Some systems may not be able to operate successfully within those rules either because they are not sufficiently robust to tolerate allowed interference from other devices, or because they generate excessive interference themselves. Examples in the first category include LMS multilateration systems which cannot tolerate interference from Part 15 devices that meet the conditions for the presumption of non-interference. Clearly, providers deploy such systems at their own risk, and should not have the prerogative to penalize other users for their own frailties. Systems in the second category include multilateration LMS systems that require high-power wideband forward links, such as those proposed by Pinpoint Communications, Inc. ("Pinpoint") and Uniplex Corporation ("Uniplex"), as well as purported "LMS" systems that routinely provide ancillary voice and data communications and messaging services, thereby operating beyond the intended scope of the new rules.

5. Given the fact that it is necessary to establish limits on acceptable and unacceptable interference to manage the sharing of the 902-928 MHz band by LMS, Part 15, and others, the Section submits that it will always be possible to envision a service requiring a system architecture that cannot operate properly within those limits. Most of the issues raised in the Petitions and the Oppositions fall into this category; i.e., they relate to requests that the limits be modified to permit a particular system design,[4] or to somehow ease the difficulties of implementation. In almost all cases, however, the requested changes would be made at the expense of some other application, and generally would be contrary to the public interest. This notion is captured by Pinpoint, which states: "Revision of the band plan to better suit one petitioner's interests - while handicapping all other providers - plainly is not in the public interest." [5] Similar statements could be made about nearly all of the changes that have been requested, including:

---

3. Opposition of the Part 15 Coalition at p. 5.
4. See, for example, Pinpoint Petition for Reconsideration at pp. 6 and 14; Uniplex Petition for Reconsideration at pp. 5-6.
5. Opposition of Pinpoint at p. 24. However, in an apparent contradiction, Pinpoint itself has proposed a modification of the band plan to provide a "shared" LMS band that would not require the purchase of licenses via the competitive bidding process (Pinpoint Petition for Reconsideration at pp. 7-13).

- Proposed changes in the band plan, as Pinpoint has noted.
- Liberalization of the permissible uses of LMS to include voice and data communications and messaging services.
- Liberalization of the grandfathering provisions of §90.363 to allow more base sites to be added, and to grandfather pending applications.
- Changes in various technical parameters (e.g., non-multilateration transmit power, wideband forward link transmit power, emission masks).
- Making the presumption of non-interference established in §90.361 "rebuttable."

It is evident from review of the Petitions and the Oppositions that there is disagreement among the involved parties on all of these issues. Indeed, there is disagreement among the LMS providers themselves on several major issues (grandfathering provisions, the band plan, and permissible uses). Most important, however, is the fact that no valid public interest reasons have been advanced to justify modifying the new rules with respect to any of these issues.

III. THE TESTING REQUIREMENT OF §90.353(a)(4) IS INTENDED TO PROVIDE A DEGREE OF FLEXIBILITY IN THE SHARING RULES AND SHOULD NOT BE ELIMINATED

6. Even the controversial testing requirement in §90.353(a)(4) for multilateration LMS systems relates to the notion of a regulatory framework to support sharing. A multilateration system which uses a narrowband forward link at 927.25-928.0 MHz and a wideband, short-duration, low-power (e.g., 1-10 watts) reverse link will likely cause little if any noticeable interference to most Part 15 applications. Thus, a system such as Teletrac's, when modified to comply with the new band plan, is unlikely to cause "unacceptable" interference to Part 15 devices, assuming duty cycles consistent with locating/monitoring functions (but not routine voice and data communications or messaging services).

7. This is not to say, however, that all conceivable LMS systems designed to operate in full compliance with the rules could not cause unacceptable interference to Part 15. The Commission clearly realizes this.[6] While the Commission's apparent intent was to structure the rules in such a way as to provide Part 15 with a known level of protection,

---

6. Order at par. 81-82.

the field testing requirement of §90.353(a)(4) is an acknowledgment of the fact that it simply is not possible to anticipate all potential future system designs. The field testing requirement therefore serves as a "safety net" to protect Part 15 from unacceptable interference from LMS systems of designs that are as yet unforeseen.

8. Both Part 15 and LMS interests have made note of the vagueness of the testing requirement,[7] and several have protested its very existence.[8] While acknowledging some of the drawbacks of the current requirement as it is stated, the Section maintains that such a requirement is an essential element in the Commission's solution for balancing Part 15 and LMS interests. Two main problems with the existing requirement seem to be that (1) "unacceptable interference" is not defined; and (2) it includes no actual specifications for field testing.[9] This situation apparently concerns potential multilateration LMS providers because they cannot relate any objective design criteria to the requirement, and therefore have no way to know a priori whether that requirement represents a potential "road block" to deployment of a particular system.[10]

9. The Section believes that these and other difficulties associated with field testing (for example, the need to test with "loaded" systems to accurately gauge the effect of a mature market) suggest the need for some sort of advance screening process with an associated set of criteria. The objective of this process would be to eliminate the need for field tests in some cases by showing conclusively that a given multilateration system design either will or will not cause serious interference problems to a significant set of Part 15 devices. Only in cases for which pre-screening analysis is inconclusive would actual field tests be necessary, and even in such cases, the pre-screening exercise might help to focus the actual field tests.

10. While the Section is sympathetic to the concerns of LMS proponents regarding the testing requirement of §90.353(a)(4), it does not believe that the requirement should be eliminated. Some safeguard is necessary to ensure that future LMS system designs do not compromise the viability of Part 15 devices in the 902-928 MHz band. Other Part 15 industry groups have expressed their willingness to work with the Commission and the

---

7. See e.g., Comments of the Ad Hoc Coalition of Gas Utilities ("Gas Utilities") at p. 11.
8. See the Oppositions of Pinpoint at pp. 13-15, Southwestern Bell Mobile Systems ("SBMS") at p. 9-11, and AirTouch Teletrac ("Teletrac") at pp. 2-3.
9. See, for example, Pinpoint Petition for Reconsideration, pp. 6-7.
10. See Opposition of Pinpoint at p. 14.

LMS community to help develop test procedures and manage the testing process.[11] The Section is also willing to participate in such an activity, and believes that a potential first step would be the development of some analytical tools and screening criteria that in some cases may obviate the need for actual field tests, or at least can serve to identify critical parameters that need to be explored during the field tests.

IV. THERE HAS BEEN NO TECHNICALLY VALID DEMONSTRATION THAT ALLOWING WIDEBAND FORWARD LINKS WILL SERVE THE PUBLIC INTEREST

11. The Section has consistently opposed the use of wideband forward links for multilateration LMS, based not on mere conjecture, but rather on extensive, detailed technical analysis, thoroughly documented in the record of this proceeding, which shows that wideband forward links do in fact constitute an unnecessary interference threat to Part 15 devices, including cordless telephones.[12] While Pinpoint continues to insist, based on its own analyses,[13] that wideband forward links are necessary for its system implementation concept, and will not harm Part 15 devices,[14] those analyses have been refuted on both points by the Section in the record of this proceeding.[15] It is therefore a matter of record that, when the relevant technical details are considered, Pinpoint has failed to provide a technically valid demonstration that the use of wideband forward links is in the public interest. The Section consequently maintains that wideband forward links should not be allowed. If they are allowed, the permitted effective radiated power ("ERP") should by no means exceed the 30 watts specified in §90.205.

12. It was in fact the controversy over the relative merits and hazards of wideband forward links, coupled with the Commission's decision to allow them, which largely motivated the testing requirement of §90.353(a)(4).[16] Thus, there is a strong historical connection between wideband forward links and the testing requirement. The Section therefore submits that elimination of that requirement, as advocated by LMS interests, is totally inappropriate as long as wideband forward links continue to be permitted.

---

11. See Electronic Industries Association/Consumer Electronics Group ("EIA") at p. 7; Part 15 Coalition at p. 7.
12. See TIA ex parte letters of August 12, 1994 and November 30, 1994.
13. Ex parte letters of Louis H. M. Jandrell, Vice President Design & Development, Pinpoint Communications, Inc., September 15, 1994 and January 25, 1995.
14. Opposition of Pinpoint at p. 18.
15. See TIA ex parte letter of November 30, 1994 and the Attachment to the Section's Comments on the Petitions for Reconsideration (May 24, 1995).
16. Order at pars. 81-82 and footnote 180 (p. 43).

V. THE GRANDFATHERING PROVISIONS OF §90.363 SHOULD NOT BE MODIFIED EXCEPT TO CLARIFY THAT GRANDFATHERED SYSTEMS ARE SUBJECT TO §90.205, §90.361, AND THE TESTING REQUIREMENT OF §90.353(a)(4)

13. In their Oppositions, some LMS proponents continue to insist that the grandfathering provisions of §90.363 should be liberalized in various ways.[17] The Section believes that the only necessary and appropriate change to §90.363 would be a clarification that grandfathered LMS multilateration systems are bound by the same requirements as the eventual MTA licensees, with respect to interference to and from Part 15. Specifically, currently unbuilt systems based on grandfathered site licenses should be required to comply with the power limits of §90.205 and the testing requirement of §90.353(a)(4), in whatever form it takes following reconsideration. Moreover, Part 15 devices should be afforded the presumption of non-interference with grandfathered LMS multilateration systems, whether or not they are currently built.

14. Interestingly, while requesting a liberalization of the grandfathering rules, SBMS also provides a reason why those rules should not be liberalized. SBMS states that the operation of eventual MTA and grandfathered licensees in the same spectrum "is certain to result in interference."[18] The Section agrees, and notes that this problem is likely to be substantially aggravated if one of the licensees uses wideband forward links. SBMS' observation provides a most convincing reason why the Commission should deny the liberalization of the grandfathering rules requested by SBMS and others.

V. THE NON-INTERFERENCE PRESUMPTION OF §90.361 SHOULD CONTINUE TO BE ABSOLUTELY IRREBUTTABLE

15. An essential cornerstone of the Commission's decision is the protection afforded Part 15 devices by the provisions of §90.361. Predictably, LMS multilateration proponents continue to insist in their Oppositions that this presumption of non-interference be made rebuttable.[19] None of them, however, have explained how a "rebuttable" non-interference presumption differs from a total absence of the the protection provided by

---

17. MobileVision requests the ability to relocate transmitter sites and add new sites, all under the umbrella of their many grandfathered site licenses (MobileVision at p. 4, footnote 2). Pinpoint makes similar requests, adding a suggestion that each licensee be limited to grandfathered systems in 25 Basic Trading Areas ("BTAs") (Pinpoint at pp. 22-23). Pinpoint's proposal apparently would allow coverage of an entire BTA in which the licensee held only a single site license. SBMS wants to be allowed to "relocate or add sites permissively within the 75 mile radius specified in each pending application" [emphasis added] (SBMS at p. 22).

18. SBMS at p. 6.

19. MobileVision at pp. 9-10, Pinpoint at pp. 9-13, SBMS at pp. 11-15, Teletrac at p. 6.

§90.361. Moreover, no convincing public-interest rationale has been offered to support the contention that the non-interference presumption be made rebuttable. The chilling effect on the Part 15 industry, and its extensive customer base, that would result from the weakening of §90.361 would far outweigh any purported benefits to the multilateration LMS industry, and its modest subscriber base.[20]

16. Teletrac contends that "remedying the interference caused by one harmful Part 15 device does not affect the Part 15 population in general, it only affects the particular device causing the interference.[21] This statement is either disingenuous in the extreme, or reflects incredible naivete on the part of Teletrac. It is analogous to saying that a neighborhood burglary affects only the burglarized home, totally ignoring the reactions and state-of-mind of the other neighborhood residents. The shutting down of even a few Part 15 transmitters by an LMS operator, or even the knowledge that such an action is sanctioned by the Commission, would cast a pall over the Part 15 industry. The ability of LMS operators to force Part 15 transmitters off the air also raises questions of how to deal with additive interference from multiple Part 15 transmitters.

17. In its Comments, Symbol Technologies, Inc. ("Symbol") suggests the addition of language to §90.361 requiring Part 15 or Amateur operators causing "persistent or recurrent interference" to "negotiate in good faith with the LMS operator toward resolving the interference."[22] Notwithstanding the questions this proposal raises about the definitions of "persistent or recurrent interference" and "good faith" negotiations, such a requirement would, in effect, completely negate the benefits of §90.361. The Section therefore opposes Symbol's proposal, as well as requests by the LMS proponents that the non-interference presumption by made rebuttable. As noted by Section in its comments on the Petitions, such changes would be indistinguishable in their effect from a complete elimination of §90.361.

---

20. Teletrac, which is the only multilateration LMS provider with a significant subscriber base, claims to serve "nearly 50,000 subscriber units" (Teletrac at p. 11). Thus, Teletrac's total subscriber base is comparable to the average number of cordless telephones sold in a single day.

21. Opposition of Teletrac at p. 5. Interestingly, in its Petition, Teletrac raised no objections to the irrebuttable presumption of non-interference in §90.361, and does not explain in its Opposition why it has changed positions.

22. Symbol at p. 10.

VI. PERMISSIBLE USES OF LMS SPECTRUM SHOULD BE CLEARLY DEFINED TO EXCLUDE VOICE OR DATA COMMUNICATIONS OR MESSAGING SERVICES

18. The ostensible aim of this proceeding was to establish permanent rules for the provision of various automatic locating and monitoring services, and not to establish provisions that would allow routine voice and data communications and messaging services in the 902-928 MHz band. Spectrum for such services, known collectively as Personal Communications Services ("PCS") has already been allocated by the Commission in the 1850-1990 MHz band, and is being licensed via the competitive bidding process.

19. It is evident from the Petitions and the Oppositions that some parties do not share this view, and believe either that the Commission's definition of LMS in §90.7 should be interpreted more liberally, or should even be relaxed to allow a broader range of services to be provided in the multilateration LMS spectrum. Teletrac, in its Opposition, states in a subheading that the new rules "should not be further restricted" with respect to permissible use and interconnection.[23] However, Teletrac actually seems to be proposing a de facto liberalization of the rules, suggesting that "voice service should be allowed on a secondary basis because it is in the public interest."[24] Teletrac does not show why a secondary voice service associated with LMS serves the public interest, but continues by stating: "Further, there should be no arbitrary restrictions that would result in inefficient use of the spectrum." This argument seems to equate LMS use of the spectrum with efficient use, and completely ignores the use of the spectrum by non-LMS operations such as Part 15. The more "efficiently" LMS systems use the spectrum, the less room there will be for other devices and services. Perhaps the most profound insight Teletrac provides is the statement that "Further restrictions on permissible use and interconnection for LMS will reduce spectrum congestion only because the extinction of LMS will result."[25] This statement implies that unless ancillary PCS-like services can be somehow bundled into an LMS service offering, there is not an adequate market to support the business. This in turn strongly suggests that it is the ancillary services, not the monitoring capabilities, that most customers want.

---

23. Teletrac, subheading II(C) at p. 12.

24. Teletrac at p. 13.

25. Teletrac at p. 15, footnote 21.

20. MobileVision has been more explicit in requesting that the rules governing permissible use be made more liberal,[26] suggesting a specific change in the language of the definition of LMS in §90.7. MobileVision also candidly states that "location services alone do not form the basis for a business case",[27] a claim that seems consistent with Teletrac's implication noted above.

21. Pinpoint and SBMS disagree with Teletrac and MobileVision. Pinpoint contends that LMS interconnection with the Public Switched Network ("PSN") should be limited to "data store and forward messages."[28] SBMS suggests that the store-and-forward stipulation for non-emergency interconnection "be defined in terms of a 'mailbox' whereby the sender deposits a message in a mailbox and the receiver independently retrieves the message from the mailbox."[29]

22. Even the restrictions proposed by Pinpoint and SBMS allow too large a loophole, through which LMS providers can provide mobile messaging services masquerading as LMS. Such services obviously are cross-elastic with PCS, and would thereby devalue the PCS licenses for which some parties have already committed substantial sums. Further, the provision of such services would cause a significant increase in radio traffic in the 902-928 MHz band, to the detriment of other users. The Section therefore strongly urges the Commission to close the loophole and clarify the definition of LMS to expressly prohibit the licensing of any system which would allow an LMS operator to provide a voice or data communication or messaging services.

VII. CONCLUSION

23. The Section does not believe any major changes, as defined herein, should be made in the new LMS rules. The irrebuttable non-interference presumption in §90.361, and the field testing requirement of §90.353(a)(4), or perhaps a modified version of it, are fundamental to the innovative balance that the Commission has established for the coexistence of diverse products and services in the 902-928 MHz band. These provisions should not be eliminated, and the non-interference presumption of §90.361 should not be made rebuttable under any circumstances.

---

26. See MobileVision Petition for Reconsideration, pp. 2-7.
27. MobileVision Petition for Reconsideration at p. 6.
28. Opposition of Pinpoint at p. 21.
29. Opposition of SBMS at p. 17.

24. The Section requests that the Commission provide clarification in two areas. First, it should be made clear that multilateration LMS systems grandfathered under the provisions of §90.363 are subject to the power limits of §90.205, the testing requirement of §90.353(a)(4), and the non-interference presumption of §90.361. Second, it should be made clear that LMS operators may not construct systems or provide services which can be used by subscribers for any sort of general or routine voice or data communication or messaging.

25. The Section believes that there may be value to a modification of the field testing requirements of §90.353(a)(4), as discussed herein, and is willing, in cooperation with other members of the Part 15 and LMS communities, to assist the Commission in developing whatever specific requirements and analytical tools may be necessary to support and manage the process of testing LMS system designs for potential interference to Part 15.

Respectfully submitted,

TELECOMMUNICATIONS INDUSTRY ASSOCIATION
USER PREMISES EQUIPMENT DIVISION
WIRELESS CONSUMER COMMUNICATIONS SECTION

by: _____
Jay E. Padgett, Chairman
Wireless Consumer Communications Section
User Premises Equipment Division
Telecommunications Industry Association

Daniel L. Bart, Vice President
Standards and Technology
Telecommunications Industry Association
2500 Wilson Boulevard
Suite 300
Arlington, VA 22201
(703) 907-7703

Dated: June 7, 1995

CERTIFICATE OF SERVICE

I, Stephanie F. Jones, do hereby certify that the Telecommunications Industry Association's Replies to Oppositions and Comments in PR Docket 93-61 have been served on this 7th day of June, 1995, by first-class prepaid postage, to the persons on the attached list.

Stephanie F. Jones

Dated: June 7, 1995

George L. Lyon, Jr.
Lukas, McGowan, Nace
& Gutierrez, Chartered
1111 19th Street, N.W.
Suite 1200
Washington, DC 20036
Attorneys for Ad Hoc Gas
Distribution Utilities Coalition

David E. Hilliard
Edward A. Yorkgitis, Jr.
Karen A. Kincaid
Wiley, Rein & Fielding
1776 K Street, N.W.
Washington, DC 20006
Attorneys for AMTECH Corp.

Mario Proietti
AirTouch Teletrac
7391 Lincoln Way
Garden Grove, CA 92641

Henry Goldberg
Henrietta Wright
W. Kenneth Ferree
Goldberg, Godles, Wiener & Wright
1229 19th Street, N.W.
Washington, DC 20036
Attorneys for the Part 15 Coalition

Kathleen Q. Abernathy
Vice President
Federal Regulatory
AirTouch Communications, Inc.
1818 N Street, N.W.
Washington, DC 20036

Wayne Watts
VP & General Attorney
Southwestern Bell Mobile Systems
17330 Preston Road
Suite 100A
Dallas, TX 75252

Theresa Fenelon
Pillsbury Madison & Sutro
1050 Connecticut Ave., N.W.
Suite 1200
Washington, DC 20036
Attorneys for AirTouch Teletrac

David E. Hilliard
Edward A. Yorkgitis, Jr.
Michael K. Baker
Wiley, Rein & Fielding
1776 K Street, N.W.
Washington, DC 20036
Attorneys for Pinpoint Communications,
Inc.

Lawrence J. Movshin
Wilkinson, Barker, Knauer & Quinn
1735 New York Ave. N.W.
Washington, DC 20006
Attorney for CellNet Data Systems,
Inc.

Henry M. Rivera
Larry S. Solomon
Ginsburg, Feldman & Bress, Chartered
1250 Connecticut Ave. N.W.
Washington, DC 20036
Attorneys for Metricom, Inc. and
Southern California Edison Co.

John J. McDonnell
Reed Smith Shaw & McClay
1200 18th Street, N.W.
Washington, DC 20036
Attorney for MobileVision, L.P.

Louis Gurman
Jerome K. Blask
Nadja S. Sodos
Gurman, Kurtis, Blask
& Freedman, Chartered
1400 16th Street, N. W.
Suite 500
Washington, DC 20036
Attorneys for Southwestern Bell
Mobile Systems, Inc.

McNeil Bryan, President
Uniplex Corporation
2905 Country Drive
St. Paul, MN 55117

Jeffrey L. Sheldon
General Counsel
UTC
1140 Connecticut Ave., N. W.
Suite 1140
Washington, DC 20036

Gordon M. Ambach
Executive Director
Council of Chief State School
Officers
One Massachusetts Ave., N. W.
Suite 700
Washington, DC 20001-1431